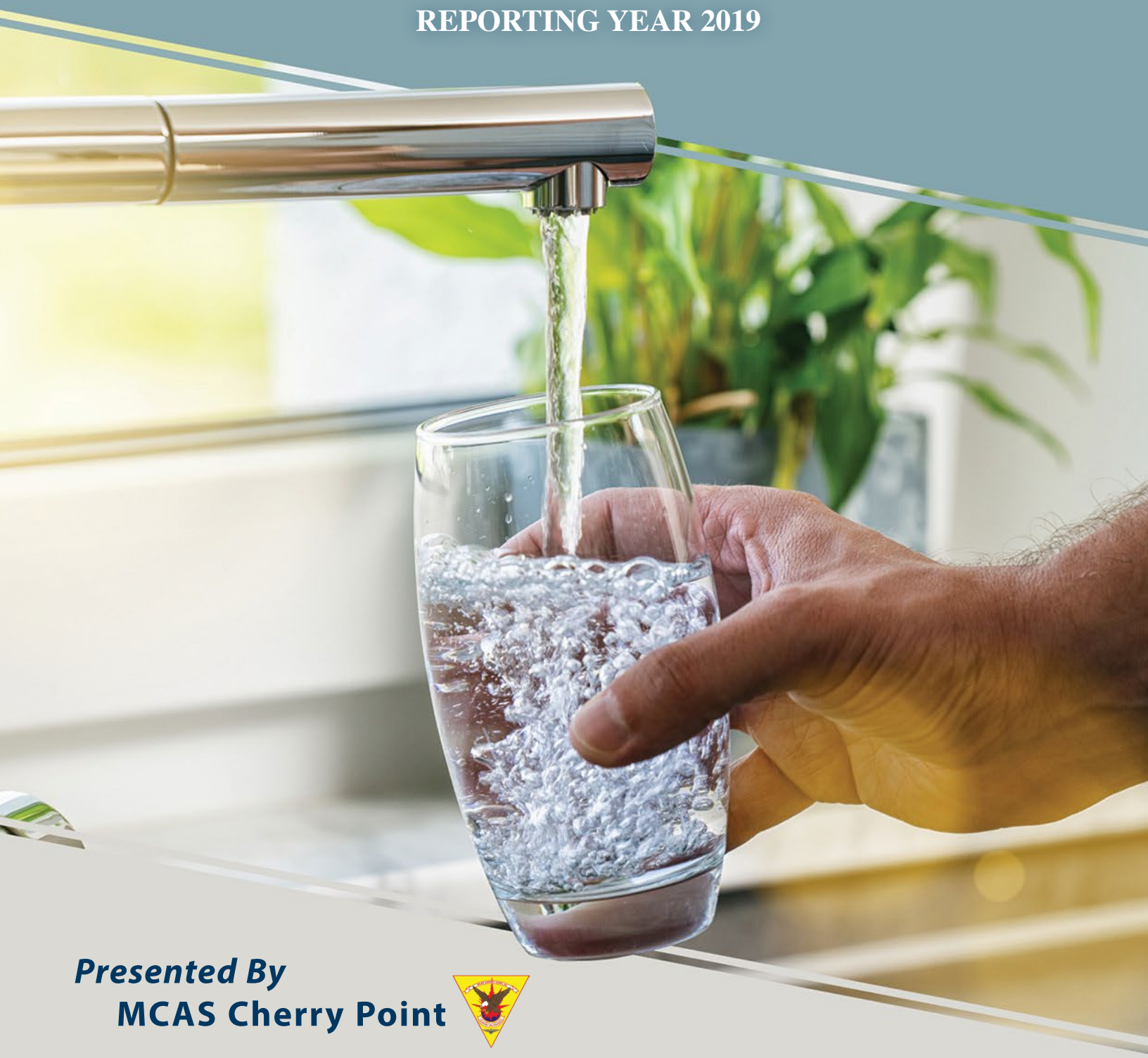
ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2019



Presented By

MCAS Cherry Point

PWS ID#: 0425035

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2019. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education, while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Where Does My Water Come From?

The source of Cherry Point's drinking water is groundwater from the Castle Hayne Aquifer, which extends from southern Virginia to Wilmington, North Carolina. Water is removed from depths of 195 feet to 329 feet below the surface by 23 wells and then pumped to the water treatment plant.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

How Does Cherry Point Treat and Purify Its Water?

Raw water is pumped to the treatment plant from 23 wells located on the air station. Certified operators process the water for treatment, involving aeration and the addition of a precise amount of chemicals for precipitant softening, which prepares the water for ozone treatment. Ozonation disinfects and removes color from the water and aids oxidation of iron, organics, and manganese. The water is then filtered through thick beds of anthracite coal and sand to remove remaining particles. The final step involves the addition of sodium hypochlorite for further disinfection. The treated water is subsequently distributed through 140 miles of piping.

Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So, get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you can save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

QUESTIONS?

For more information about this report, or questions relating to your drinking water, please call Steve Reavis, Public Works Department, at (252) 466-6850, or Cheryl Murray, Environmental Affairs Department, at (252) 466-5151.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban storm-water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm-water runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban storm-water runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/lead.

Source Water Assessment

The North Carolina Department of Environmental Quality (NCDEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The results of the assessment are available in SWAP Assessment Reports that include maps, background information, and a relative susceptibility rating of Higher, Moderate, or Lower.

The relative susceptibility rating of each source was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The SWAP Report, dated April 18, 2017, indicates a susceptibility rating of high for well 21, moderate for wells 4, 11, and 26, and lower for all other wells. The complete SWAP Assessment Report may be viewed on the Web at www.ncwater.org/?page=600. You may also mail a written request for a printed copy to Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate your system name and number, and provide your name, mailing address, and phone number. If you have any questions about the SWAP Report, please contact the Source Water Assessment staff by phone at (919) 707-9098.

Test Results

Our water is monitored for many different kinds of substances on a sampling schedule determined by the State. Here, we only show those substances that were detected in our water. Detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. Certain substances are monitored less often than annual because the concentration does not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was collected.

The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2019	[4]	[4]	2.7	0.03–2.7	No	Water additive used to control microbes
Fluoride (ppm)	2017	4	4	0.2	0.20–0.20	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)–BO1 [1]	2019	60	NA	63	47 - 75	Yes	By-product of drinking water disinfection
Haloacetic Acids [HAAs] (ppb)–BO2 [1]	2019	60	NA	63	54 - 77	Yes	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2019	80	NA	66	44–76	No	By-product of drinking water disinfection

Tap Water Samples Collected for Copper and Lead Analyses from Sample Sites throughout the Community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2019	1.3	1.3	0.124	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2019	15	0	6	0/30	No	Lead services lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2017	50	NA	14	14–14	No	Leaching from natural deposits

UNREGULATED SUBSTANCES [2]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Nickel (ppm)	2017	0.1	0.1–0.1	Nickel is a natural element of the earth's crust; therefore, small amounts are found in food, water, soil, and air
Sodium (ppm)	2017	62.6	62.6–62.6	Naturally occurring
Sulfate (ppm)	2017	41	41–41	NA

UNREGULATED CONTAMINANT MONITORING RULE - PART 4 (UCMR4)			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Bromide (ppm)	2019	0.031	0.02–0.031
Bromochloroacetic Acid (ppm)	2019	2.4	2.2–2.4
Bromodichloroacetic Acid (ppm)	2019	3.8	3.5–3.8
Dichloroacetic Acid (ppm)	2019	25	24–25
Manganese (ppb)	2019	4.5	4.5–4.5
Monobromoacetic Acid (ppm)	2019	0.47	0.36–0.47
Monochloroacetic Acid (ppm)	2019	3.1	2.6–3.1
Total Organic Carbon [TOC] (ppb)	2019	7000	7000–7000
Trichloroacetic Acid (ppm)	2019	45	39–45

[1] One Notice of Violation is issued for an exceedance of the LRAA occurring in the same quarter. 63 ppb = 0.063 mg/l

[2] Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

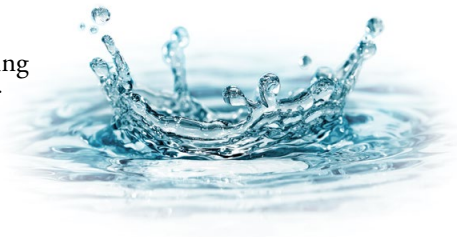
System Monitoring Update: HAA5 Violation

Compliance with Haloacetic Acid (HAA5) is demonstrated though averaging four locational quarterly sample results over a 12 month period, referred to as the Locational Running Annual Average (LRAA). Quarterly monitoring completed in December 2019, indicated an increased level of HAA5 formation in the water supply. This increase resulted in exceedance of the 0.060 mg/l maximum contaminate level (MCL) at two locations. The highest average level of Total Haloacetic Acids had a concentration of 0.063 mg/L, resulting in a monitoring violation for the water system. The notice of violation (NOV) from the State was received January 13, 2020, and a public notice was delivered to consumers on January 17, 2020.

MCAS Cherry Point immediately conducted an assessment of the water purification process and adjusted the treatment system to correct the situation. Frequent monitoring is being conducted to enable rapid action if addition adjustments are necessary. While concentrations are trending lower, we anticipate the system will return to full compliance by second-quarter monitoring in June 2020.

A new membrane water treatment plant is nearing completion and is scheduled for operation in late 2020. This advanced technology system provides greater reliability in controlling the formation of Total Haloacetic Acid and other disinfection by-products.

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.



Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention contact the Safe Drinking Water Hotline at (800) 426-4791.